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(71) Applicants: THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 22nd floor, 300 Lakeside Drive, Oakland, CA 94612-3550 (US). SYMYX TECHNOLOGIES [US/US]; Suite 180, 4005 Miranda Avenue, Palo Alto, CA 94304 (US).			Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(72) Inventors: SCHULTZ, Peter, G.; 4616 Rising Hill Court, Oakland, CA 94619 (US). XIANG, Xiaodong; 215 Kevington Place, Alameda, CA 94502 (US). GOLDWASSER, Isy; Apartment C, 435 Encinal Avenue, Menlo Park, CA 94025 (US).			
(74) Agents: WACKOWSKI, Eugenia, Garrett et al.; Townsend and Townsend and Crew, Steuart Street Tower, One Market, San Francisco, CA 94105-1492 (US).			

(54) Title: THE COMBINATORIAL SYNTHESIS OF NOVEL MATERIALS

(57) Abstract

Giant magnetoresistive cobalt oxide compounds are produced by combinatorial synthesis. Combinatorial synthesis is done by using a substrate having an array of diverse materials thereon prepared by delivering components to predefined regions on a substrate and simultaneously reacting the components to form at least two materials. Other materials that can be prepared using these methods are covalent network solids, ionic solids and molecular solids. Examples are inorganic, organometallic, intermetallic, ceramic organic polymeric and composite materials. Once prepared, these materials can be screened for useful properties such as magnetoresistance. Thus, the present invention provides for the parallel synthesis and analysis of novel material having useful properties.